THIS OPINION WAS NOT WRITTEN FOR PUBLICATION

The opinion in support of the decision being entered today (1) was not written for publication in a law journal and (2) is not binding precedent of the Board.

Paper No. 20

UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

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Ex parte ANDREW E. McGIRR,
PAUL L. CAMWELL
and
JOHN G. McRORY

_____

Appeal No. 96-0365
Application 07/983,145[1]

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ON BRIEF

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Before HAIRSTON, JERRY SMITH, and BARRETT, Administrative Patent Judges.

HAIRSTON, Administrative Patent Judge.

DECISION ON APPEAL

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[1] Application for patent filed November 30, 1992. According to applicants, the application is a continuation of Application 07/725,213, filed June 25, 1991, which is a continuation of Application 07/339,573, filed April 18, 1989.

This is an appeal from the final rejection of claims 27 through 29. In an Amendment After Final (paper number 10), claim 28[2] was amended.

The disclosed invention relates to antenna structure for a hand-held cellular telephone. The antenna includes at least two parallel, co-planar patch radiating elements that are elevated above a ground reference plane by a conductive pedestal mounted on the ground reference plane. A feedpoint on one of the patches is connected to the output of a transmitter via a cable, and a feedpoint on the other patch is connected to the input of a receiver via a separate cable. According to the claimed invention, the two cables are not connected to one another.

Claim 27 is the only independent claim on appeal, and it reads as follows:

27. An antenna for use with a hand-held cellular telephone which is held to the head of a user when in use, the cellular telephone including a radio frequency transmitter having a transmitter output terminal and a radio frequency receiver having a receiver input terminal, the antenna comprising:

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[2] According to the examiner (Answer, page 1), the amendment to claim 28 obviated the indefiniteness rejection.

A. a receive radiating element having a receiver feedpoint, the receiver feedpoint directly connected to the receiver input of the receiver via a receiver input cable, the receive radiating element formed as a first patch having a major axis;

B. a transmit radiating element having a transmitter feedpoint, the transmitter feedpoint being directly connected to the transmitter output via a transmitter output cable, the transmitter and receiver cables being separate from one another and not connected to one another, the transmit radiating element formed as a second patch having a major axis, the transmit radiating element disposed in the same plane as the receive radiating element, and such that the major axis of the transmit radiating element is parallel to the major axis of the receive radiating element;

C. a ground reference plane, disposed adjacent the receive and transmit radiating elements and positioned such that the ground reference plane is between said radiating elements and the head of a user when the telephone is in use; and

D. spacing means for spacing the ground plane from the receive and transmit radiating elements, said spacing means connecting electrically to the ground reference plane and including at least one conductive outer surface, said spacing means being positioned to isolate the receive radiating element from the transmit radiating element.

The references relied on by the examiner are:

Dodington	2,947,987	Aug. 2, 1960
Yokoyama et al. (Yokoyama)	4,641,366	Feb. 3, 1987
Zakman	4,876,552	Oct. 24, 1989
McGirr et al. (McGirr)	5,231,407	July 27, 1993

(filed Apr. 18, 1989)

Claims 27 through 29 stand rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1 through 20 of McGirr.[3]

Claims 27 and 28 stand rejected under 35 U.S.C. § 103 as being unpatentable over Zakman or Yokoyama.

Claim 29 stands rejected under 35 U.S.C. § 103 as being unpatentable over Zakman or Yokoyama in view of Dodington.[4]

Reference is made to the final rejection, briefs, and the answer for the respective positions of the appellants and the examiner.

OPINION

We have carefully considered the entire record before us, and we will reverse all of the rejections.

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[3] The subject application and McGirr both originated from Application 07/339,573 filed on April 18, 1989.

[4] Although Dodington may not be listed under the prior art of record (Answer, page 3), the rejection of record (Final rejection, pages 4 and 5; Answer, pages 5 and 6; Brief, pages 12 and 13) clearly states that Dodington is used in the rejection of claim 29. Thus, the omission of Dodington from the list of prior art of record is treated as harmless error.

Turning first to the obviousness-type double patenting rejection, the examiner indicates (Final rejection, pages 5 and 6) that:

> Although the conflicting claims are not identical, they are not patentably distinct from each other because at least claims 7, 9, 19 and 20 thereof recite the three basic elements of patches as radiating elements, ground reference and pedestal in specific terms and arrangements, broadly recited in this application as claims 27-29. The recitation of electrically connected in the patent claims implies/include capacitive coupling. The broader claims 27-29 define the same antenna arrangement of the patented claims.

Appellants respond (Brief, pages 13 and 14) that:

> While, admittedly, the stated elements are found in the claims of the present application, the "separate feedline" structure is not found in the claims of U.S. Patent 5,231,407. As explained above, the claims define a novel combination of receive patch element having a receiver feedpoint, a transmit patch element having a transmitter feedpoint, with separate cables connected between the receiver and the receive patch feedpoint, and the transmitter and the transmit patch feedpoint. This separate feedline structure is not recited in the claims of the issued patent, and is not obvious in view of the prior art, ...

The obviousness-type double patenting rejection of claims 27 through 29 is reversed because none of the claims in McGirr recites appellants' claimed separate cables for the two patch

feedpoints, and because the examiner has not addressed the lack of such "separate feedline" structure in McGirr's claims.

Turning next to the obviousness rejection of claims 27 and 28 based upon the teachings of Zakman or Yokoyama, there is no dispute between appellants and the examiner that both Zakman and Yokoyama disclose all of the antenna structure set forth in claims 27 and 28, except for the noted "separate feedline" cable structure. In Figure 5 of Zakman, the two patches 503 and 505 are fed signals at feedpoints 519 and 521, respectively. Zakman discloses that "a signal source 513 (having an internal resistance 515 and a feedline inductance 517) is connected to appropriate two-point connection points 519 and 521 on either side of notch 511" (column 4, lines 15 through 19). It is clear from this disclosure in Zakman that the cables leading from the two feedpoints 519 and 521 are connected together. In Figure 6 of Yokoyama, cables 61 and 62 are connected to feedpoints 53 and 54, respectively, and the opposite ends of the two cables are tied together at point 64. The claimed "cables being separate from one another and not connected to one another" is likewise not taught by Yokoyama.

Appellants argue that neither Zakman nor Yokoyama teaches or would have suggested the claimed separateness of the cables (Brief, pages 5 through 12). The examiner's line of reasoning for finding claims 27 and 28 obvious is as follows:

> [I]t is recognized by the antenna artisan that at some point along the receiver path and transmitter path, there exists separate signal feeders to respectively connect thereto. Thus, it would have been obvious to a skilled artisan to separately feed, by providing separate feed cables, to the receiver and from the transmitter, when connecting respective antennas in Zakman (Answer, pages 4 and 5).
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> . . . .
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> . . . The [Yokoyama] feedlines 61, 62 feed a common line 63. [sic] however, it would have been obvious to a skilled artisan to provide separate feedlines to the transmitter and receiver (Answer, page 5).
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> . . . .
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> . . . [T]he suggestion of feeding separate receive signals to feedpoint 521 and separate transmit signals to feedpoint 519 to the receiver/from the transmitter had been made and recognized by the skilled artisan as well within the common knowledge thereof. In other words, it is always obvious and taken for granted by the antenna engineer that separate antennas, shown by Zakman or Yokoyama et al and designed for separate transmit and receive frequencies, may be separately fed or connected to the transmitter or receiver. The mere history of the communications arts leads the skilled artisan to separate feeding because separate transmitters and separate receivers were built before transceivers were. . . The reference (i.e., either Zakman or Yokoyama et al)

> does not have to specifically suggest to the skilled artisan that separate feeding cables may be used to feed the separate patch antennas disclosed therein. Such separate feedline cables are taken for granted and are certainly common knowledge of the antenna/RF engineer (Answer, pages 8 and 9).

Without the benefit of at least a scintilla of evidence in the record to support the examiner's extensive line of reasoning, we are inclined to agree with appellants' argument that the examiner's reasoning is nothing more than "conclusionary statements which are impermissibly motivated by the teaching of the present invention, rather than the prior art, and therefore are based upon hindsight" (Reply Brief, page 2). The obviousness rejection of claims 27 and 28 is reversed.

In the obviousness rejection of claim 29, Dodington was cited by the examiner (Answer, page 5) to show that the use of a third patch in an antenna was well known in the art. The obviousness rejection of claim 29 is reversed because Dodington does not cure the cable separateness shortcoming in the teachings of both Zakman and Yokoyama.

DECISION

All of the rejections of record have been reversed. The decision of the examiner is, therefore, reversed.

REVERSED

KENNETH W. HAIRSTON Administrative Patent Judge	)
JERRY SMITH Administrative Patent Judge	) BOARD OF PATENT) APPEALS AND) INTERFERENCES
LEE E. BARRETT Administrative Patent Judge	)

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